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Application of Control System Studio for the NOvA Detector Control System.

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In the NOvA experiment, the Detector Controls System (DCS) provides a method for controlling and monitoring important detector hardware and environmental parameters. It is essential for operating the detector and is required to have access to roughly 370,000 independent programmable channels via more than 11,600 physical devices.
In this paper, we demonstrate an application of Control System Studio (CSS), developed by Oak Ridge National Laboratory, for the NOvA experiment. The application of CSS for the DCS of the NOvA experiment has been divided into three phases: (1) user requirements and concept prototype on a test-stand, (2) small scale deployment at the prototype Near Detector on the Surface, and (3) a potential for a larger scale deployment at the Far Detector. We also give an outline of the CSS integration with the NOvA online software and the alarm handling logic for the Front-End electronics.

Primary authors: LUKHANIN, Gennadiy (Fermi National Accelerator Lab. (US)); FRANK, Martin (UVA)

Co-authors: HATZIKOUTELIS, Athanasios (UTK); KOWALKOWSKI, James (Fermi National Accelerator Laboratory (FNAL)); BIERY, Kurt (CMS/Fermilab); RECHENMACHER, Ronald (FNAL)

Presenters: LUKHANIN, Gennadiy (Fermi National Accelerator Lab. (US)); FRANK, Martin (UVA)

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